

Title (en)

SELF-POWERED ACTIVE VIBRATION AND ROTATIONAL SPEED SENSORS

Title (de)

SELBSTANGETRIEBENE AKTIVE VIBRATIONS- UND DREHZAHLSENSOREN

Title (fr)

CAPTEURS DE VIBRATIONS ET DE VITESSE DE ROTATION ACTIFS AUTO-ALIMENTÉS

Publication

EP 3951133 A1 20220209 (EN)

Application

EP 21185565 A 20210714

Priority

US 202016944455 A 20200731

Abstract (en)

Self-powered active sensing systems (SASS) for use in downhole drilling environments are disclosed. Sensor devices of the SASS can include a self-powered rotational speed sensor including a ring structure attached around a drill string. The ring rotates within a groove formed in an outer housing. Bearings on the ring are arranged to contact moveable members extending from the housing into the groove thereby causing the moveable member to generate an electrical signal representing rotational speed. The SASS can include a vibration sensor having a ring spring mounted within a housing. Spherical bearings on the outer surface of the ring are configured to contact screens that are mounted to the housing and that generate a signal representing movement of the bearing/ring from vibration. Multiple SASS units configured to wirelessly transmit sensor data can be placed along a drill string providing a distributed self-powered system for measuring downhole parameters.

IPC 8 full level

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CPC (source: CN EP US)

E21B 7/24 (2013.01 - US); **E21B 17/1057** (2013.01 - US); **E21B 41/0085** (2013.01 - EP US); **E21B 45/00** (2013.01 - CN); **E21B 47/00** (2013.01 - CN); **E21B 47/007** (2020.05 - EP); **E21B 47/01** (2013.01 - US); **E21B 47/017** (2020.05 - EP US); **E21B 47/12** (2013.01 - CN); **E21B 47/13** (2020.05 - US); **E21B 47/26** (2020.05 - US); **H02J 7/32** (2013.01 - CN); **H02N 1/04** (2013.01 - CN); **H02N 2/186** (2013.01 - CN); **H02N 2/188** (2013.01 - CN)

Citation (search report)

- [A] US 2012222900 A1 20120906 - RODNEY PAUL F [US], et al
- [A] US 5226332 A 19930713 - WASSELL MARK E [US]
- [A] US 6065332 A 20000523 - DOMINICK JOHN MCEWEN [GB]
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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

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DOCDB simple family (application)

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